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ABSTRACT

The objective of this booklet is to present an integrated picture of the philosophy, process, and practices of strategic planning in an organizational context. It is based on the premise that planning includes the design of a desired future as well as effective ways of bringing it about. Specifically, the document illustrates a planning process-the Planning-Allocating-Monitoring Cycle (PAM). The PAM cycle consists of seven steps: (1) setting goals and objectives, (2) determining principal factors which influence these goals and objectives, (3) identifying likely future changes, (4) identifying choices, (5) assessing consequences, (6) deciding the best ways to allocate resources in light of various consequences, and (7) monitoring these processes so that they work toward desired results. Within a corporate context, the PAM cycle focuses on identifying most important factors influencing specified goals and objectives, identifying the best information about each factor, getting a clear picture of the situation as a whole, and determining the impact of alternative strategies on bottom-line performance measures. Four case studies are presented as examples of PAM uses within a corporate context. The case studies involve conducting a survey of corporate managers to determine how they view the relationship of their organizations with society, forecasting world oil prices in the 1980's, projecting scenarios of investment in the United Kingdom in the 1980's, and creating a simulation model for a new high technology project. For each case study, information is presented on pragmatic application of PAM principles, processes used which highlight PAM principles, and evaluation of survey/model/forecasting results in light of PAM principles and other available data. (BD)

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A FRAMEWORK FOR CORPORATE STRATEGIC PLANNING: PHILOSOPHY, PROCESS, AND PRACTICE

by

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prepared for

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Paper P-97

A FRAMEWORK FOR CORPORATE STRATEGIC PLANNING: PHILOSOPHY, PROCESS, AND PRACTICE

Roy Amara, President
Institute for the Future

PHILOSOPHY: DEFINITIONS

Planning has as many definitions as it has practitioners; a review of some of these definitions will provide a context for examining corporate strategic planning.

For a general philosophical perspective on planning, I find few better than this statement by a U.S. State Department official, Mr. G. A. Morgan:

> "The future and the past fight an endless battle of the present."

An underlying and persistent philosophical debate on the role of planning deals precisely with this statement in the form of questions: How different do we expect the future to to be from the past? How much do we want to discount future benefits and losses vis-a-vis present, more immediate benefits and losses? What implicit assumptions do we want to make about rates of change?

At the next level of specificity is a somewhat less philosophical and pragmatic definition, focusing on the notion of choice, provided by Mr. R. C. Ackoff:

> "Planning is the design of a desired future and of effective ways of bringing it about."

Here the notion of intentionality or choice is introduced into planning through the interventions aimed at increasing the likelihood of achieving "a desired future."

But perhaps it is Mr. Donald Conover of Western Electric who best captures the critical dimension of planning:

> "The real planners are the managers who make the final decisions, and what we call planning is the support service intended to help make decisions better."

The key message here is the emphasis on the essential unity of planning and decision making.

In preparation for a focus on "process," I would like now to disaggregate planning functions to the next level of detail:

"Planning is the definition and assessment of goals, alternatives, and consequences to determine role and direction in a changing environment."

And finally I want to define the distinguishing features of strategic planning:

"Strategic planning is distinguished from planning in focusing as heavily on the longer term as on the more immediate time frame and as heavily on external as on internal factors."

The remainder of this paper will focus on the processes and practices of strategic planning in a corporate context.

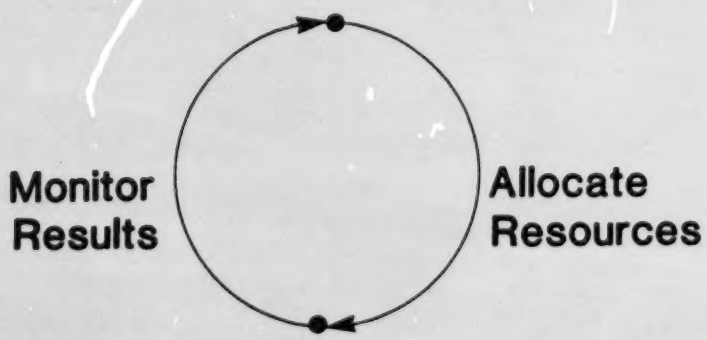
PROCESS: THE PLANNING-ALLOCATING-MONITORING (PAM) CYCLE

As noted, planning becomes a very sterile and barren activity if it is not viewed integrally with acting and monitoring. I find it instructive to think in terms of a planning-allocating-monitoring (PAM) cycle, both as a framework for our work and as a structure for relating a variety of kindred analytical components of the planning process.

One can, of course, dispense with planning altogether; and, indeed, many organizations do very little formal or informal planning of any kind and manage to survive and even thrive. Their behavior can be represented as shown in Figure 1, where, basically, resources are allocated, or decisions are made, by the "seat of the pants." The PAM cycle is essentially truncated to an AM process.

Figure 1

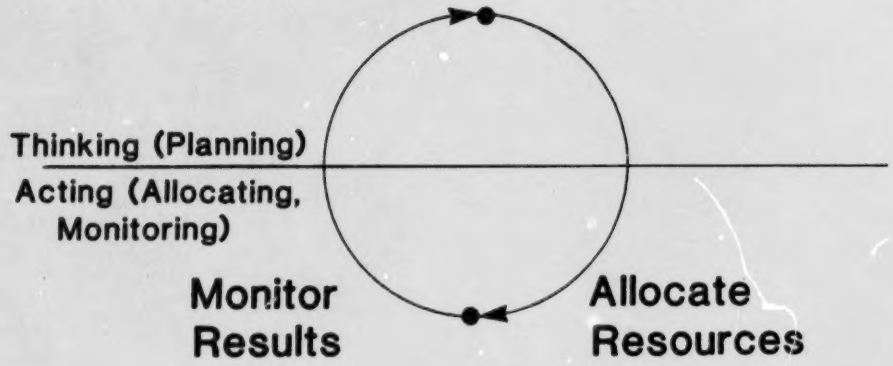
Purely Reactive AM Cycle



At the next stage, if we attempt to distinguish between thinking and acting (interleaved as they inevitably are), we represent the case in which some thought--but not very much--is given to successive allocation of resources. But on the whole, such thinking may be characterized as "low level" or largely routine (Figure 2). The resulting behavior may be quite satisfactory when the outside environment is not changing rapidly, when time horizons are relatively short, or when operations can be fairly routinized. It will very likely lead to degradation of performance, or even disaster, if any of the above conditions do not apply.

Figure 2

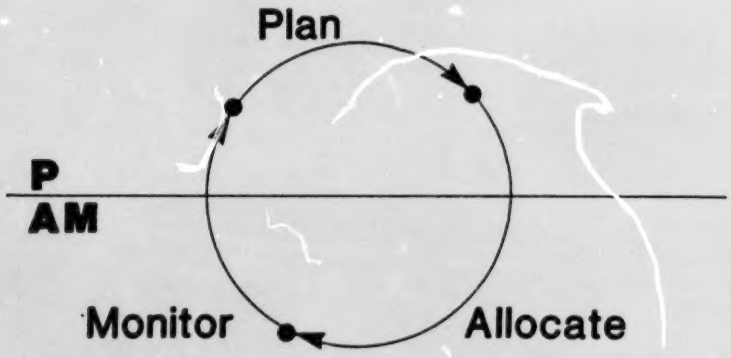
Modified Reactive AM Cycle



Now let's introduce the planning function into the cycle in the simplest possible terms (Figure 3). Planning is shown as a conceptual process that: (1) informs the allocation of resources which, in turn, (2) generates information about actual performance, which is (3) fed back to inform and refine the planning process.

Figure 3

Simplest PAM Cycle



The planning process can next be subdivided into more discrete stages or phases that include explicitly the notions of goals, alternatives, and consequences. These are stated in the form of five iterative questions:

(1) What are our goals/objectives?

(2) What principal factors influence achieving these goals/objectives?

(3) How may these change in the future?

(4) What choices do we have?

(5) How do we value these choices in terms of their consequences?

To these stages, we can now add the allocating and monitoring phases shown earlier, stated in question form:

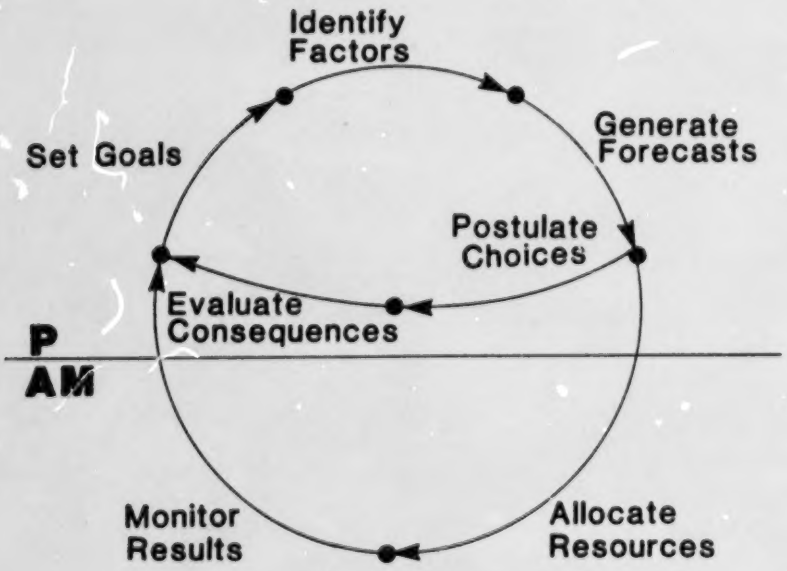
(6) How do we best allocate our resources in the light of perceived consequences?

(7) What do we monitor to improve the foregoing process by iteration?

These stages are shown diagrammatically in Figure 4.

Figure 4

Amplified PAM Cycle



Several features of this amplified representation should be noted. First of all, one can start at any stage of the cycle and move to any other stage, omitting or by-passing some stages. Similarly, the point of entry can be from any number of perspectives. For example, as shown in Figure 4: the strategic planner may feel most comfortable by entering through "set goals"; the systems analyst through "identify factors"; the futurist through "generate forecasts"; the decision analyst through "postulate choices"; the operations researcher through "evaluate consequences"; the decision maker through "allocate resources"; and the operations manager through "monitor results." In many ways the diagram is reminiscent of the story of the seven blind men and the elephant, in which each individual takes hold of a different portion of the beast without recognizing that it all fits together in some remarkable way. The last and perhaps most important feature of Figure 4 is that the whole process is intrinsically iterative. It suggests adjustment, adaptation, incrementalism--as well as humility stemming from the uncertainties of incomplete knowledge and understanding.

PAM IN A CORPORATE CONTEXT*

To imbed the PAM cycle in a corporate context, the diagram of Figure 4 will be redrawn and overlayed onto a representation of a corporation (see Figure 5) in the simplest possible terms: an "outside" (the external environment of the corporation) and an "inside" (the internal operations of the corporation). In general, the "outside" environment includes changes in all those external and largely uncontrollable factors (within and external to the U.S.) that can influence the performance of the organization: demography, labor force, economics, resources and physical environment, technology, values and lifestyles, role of government, industrial development patterns, market and competitive characteristics, and so forth. Similarly, "inside" includes all internal and largely controllable factors bearing on the performance of the corporation: labor intensivity, efficiency of processes, management effectiveness, product characteristics, product price, marketing effort, and so forth. Some factors--such as product price--may appear both as external and internal factors.

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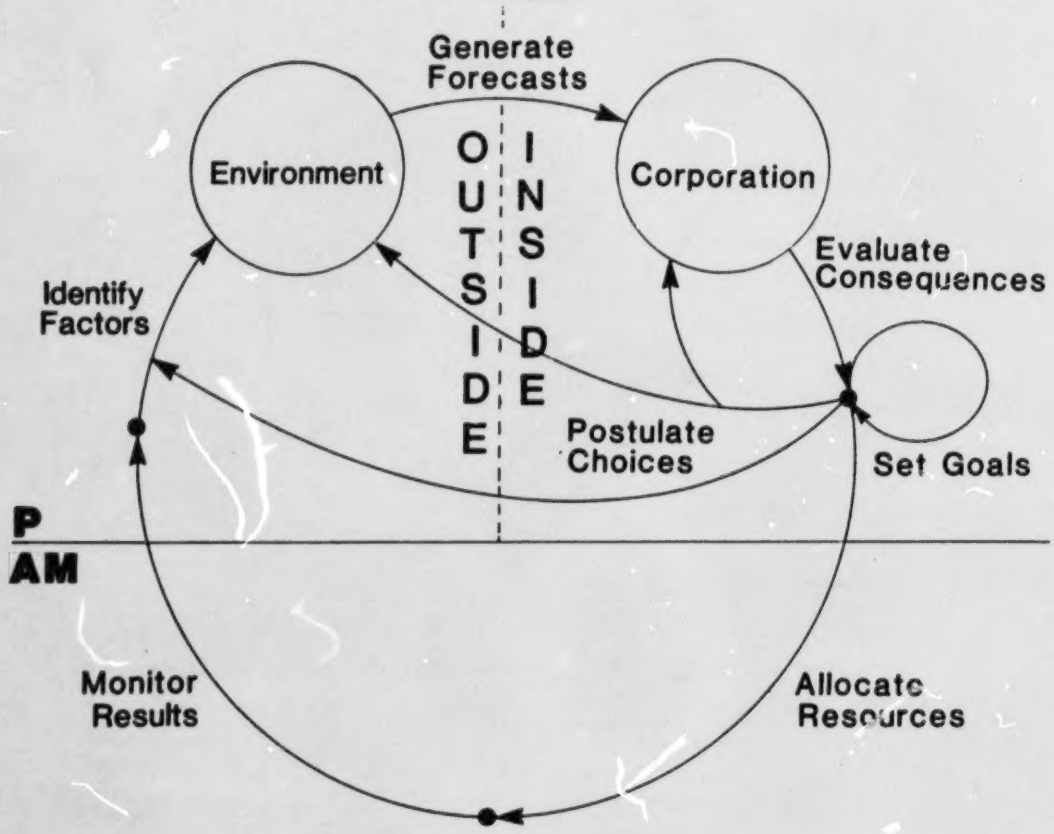
*For a somewhat different perspective on corporate strategic planning focusing on corporate/division responsibilities, see Roy Amara, "Strategic Planning in a Changing Corporate Environment," Long Range Planning, vol. 2, no. 1, 1979, pp. 2-16.

Ideally, what we would like to have is a causal environmental model (within the "environment" circle of Figure 5) that interrelates all external factors and generates accurate forecasts of these particular external variables (or strategic "hooks," as we shall later call them) on which the performance of the corporation depends. And, in turn, we would like also a similar causal corporate model (within the "corporation" circle of Figure 5) that could be used to evaluate (and select "the best") strategies as affected by the environmental forecasts and as compared to the desired (financial) goals and objectives. Resources then actually would be allocated in accordance with evaluated choices, and the whole process monitored to obtain useful feedback for making appropriate midcourse changes and adjustments as required.

Figure 5

PAM in a Corporate Context



No corporation or organization--large or small--has been able to construct such causal models and I doubt that anyone ever will. The external environment is far too complex; the uncertainties are much too great; and our understanding is hopelessly fragmentary. Nevertheless, it is instructive to start with this kind of idealized representation to understand more clearly how approximations to this ideal can be usefully made.

What is practical and realizable, and what approximations must we make? The most important approximation is the following: Instead of causal models representing the environment and the corporation, we shall use combinations of partial and incomplete representations ("models," if you like).* We will rely most heavily on premodels and informed judgment. Premodels are--as the name suggests--much cruder structure- or connectivity-describing aids: relevance trees, connection or block diagrams, matrices, scenarios, statistical correlations, or even partial models--each intended to aid our thought processes. Informed judgment represents the perceptions and assumptions of particular individuals who we believe have useful images of possible, probable, or even preferred futures. Here an array of techniques can be used to elicit and distill such perceptions: structured interviews; conversion of subjective judgments to probability density functions; calibrating of individuals with respect to substantive and assessing ability; and aggregating of individual perceptions to present a composite state of knowledge (or ignorance) about a variable or group of variables.

Three other important approximations may be made in the representation in Figure 5. First, instead of forecasts of environmental factors, we may substitute multiple scenarios or partial models built around appropriate corporate strategic "hooks"--the "hooks" representing highly relevant variables (e.g., the number of household starts, the level of discretionary income, the growth in demand for a particular product) to which corporate performance is highly sensitive. Secondly, instead of a set of general measures of corporate performance, we usually substitute the more familiar and readily measurable financial variables, such as operating income, return on assets, return on investment. Finally, instead of striving for a "best possible match" (optimizing) between projected performance and stated goals, we aim for "satisficing"--that is, achieving levels of performance which, when compared to those desired, are in a pragmatic sense "good enough."

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*Roy Amara, "Some Methods of Futures Research", Institute for the Future Working Paper WP-23, 1975.

PRACTICE: SOME PLANNING EXAMPLES

One might ask: "Haven't we approximated beyond the point for which useful guidance can be obtained?" Not so, and the four generic examples chosen--each drawn from institute studies in which highly useful results were delivered to clients--are intended to illustrate the utility of the processes described.

Instead of the "top-down" philosophical/conceptual approach that we have been pursuing so far--with its premises, definitions, idealized representations, tools, and approximations--I will reverse the perspective and adopt an essentially "bottom-up," more operational/nuts and bolts approach. Each of the four examples or cases is selected to illustrate the four essential questions any planner or decision maker must address:

1. What are the most important factors influencing the achievement of my objectives and goals?
2. What is the best information available about each such factor?
3. What is the picture of the situation as a whole?
4. What impact do alternative strategies have on bottom-line performance measures?

Case 1. The Strategic Audit: Identifying the Strategic "Hooks"* (Most Important Factors)

How does one get a handle on those important strategic "hooks" that connect the outside with the inside of the corporation? A way that we have found remarkably effective is outlined below.

Summary of approach

Step 1. Interviews are conducted with 15 to 20 members of top management in the corporation. The group includes the chairman, the chief executive officer, and all first-line operating and staff of vice presidents.

Step 2. Each interview is private, semistructured, and no more than an hour long, with the source of all responses and observations kept anonymous.

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*Michael Palmer and Roy Amara, "Strategic Issues: A Profile of Top Management Perceptions," Proprietary Study for Consolidated Freightways, Inc. by Institute for the Future, 1979.

Step 3. Each individual can be asked directly to identify those external variables most critical to the present and future performance of the whole corporation (or part of it), or most critical to the performance of a group of products or services (or particular ones). And this is done.

Step 4. However, less direct and somewhat more circumspect approaches usually prove to be more effective in eliciting useful responses. Three such approaches are illustrated:

Meeting the clairvoyant. "Suppose I were a true clairvoyant able to predict precisely any variable of interest to you. Also, suppose that I am very expensive and in great demand, so your allocated time is only five minutes. What specific questions would you pose about the external environment in, say, 1982 or 1985 or even 1990, and tell me why the information is valuable and how you would use it."

Optimistic/pessimistic scenarios. "Describe for me an optimistic future scenario for your corporation--one that is not utopian but for which there is only 1 chance in 10 that it could be even better. Now, also describe a pessimistic future scenario--one for which you estimate only 1 chance in 10 that it could be even worse."

The unspoken or hidden assumptions. "The operation of virtually every organization is premised on a set of basic assumptions about the state of the outside world--or about goals and objectives of the corporation--that are some combination of the explicit and the implicit. Can you identify those implicit assumptions about the outside environment that you feel need to be reexamined?"

Step 5. Each individual typically contributes the equivalent of 10 to 20 key variables; some overlap among individuals is normal. The responses are pooled, and an initial frequency profile of strategic "hooks" is generated.

Step 6. Some major factors will have been identified by virtually everyone. Others-- at least equally important--may be identified by only one or two individuals. Judgment about which set of factors is most crucial is not determined solely on the basis of frequency of occurrence.

Step 7. The full profile with analysis and notation of possible gaps is presented in written and oral form to the group. This set (or a subset of, say, 5 to 10) of critical factors or strategic "hooks" can then become the starting point for a strategic planning effort.

Step 8. Specific factors are, of course, peculiar to each organization. For example, at a macro level these may include: world oil price, number of household starts, and growth of discretionary income. At more micro levels (e.g., characteristics of a market) the factors can include: the rate of growth of demand for a particular product, the rate of development of a particular technology, and the state of competition.

Case 2. Forecasts of a Crucial Variable: World Oil Price in the '80s* (Best Information)

Few variables about the external environment are as key as world oil price, and few are surrounded by greater uncertainty--not primarily due to economic (i.e., supply/demand) factors, but to military, political, and cultural ones. Here forecasting must necessarily rely heavily on judgment instead of models, or even premodels. A summary of the general approach we have used is described below.

Summary of approach

Step 1. A set of three to seven individuals is identified--each of whom we believe is most knowledgeable about some key dimensions of world oil price. The selection of such individuals is itself an act of judgment. No way exists for assuring that one has the "best" group. Experience has led us to believe that this size of group represents a good compromise between "additional information contributed" and "additional cost."

Step 2. A set of carefully constructed questions is posed in face-to-face interviews. Questions are structured so that a probability density function can be constructed for each individual: Three price forecasts are elicited for each target year--the first being an estimate that there is 1 chance in 10 that the price could be even lower, the second that there's a 50-50 chance that the price could be either higher or lower, and the third that there is only 1 chance in 10 that it could be even higher. Each individual is also asked to identify reasons or factors influencing the selection of particular values.

Step 3. Also elicited from each participant is information to guide the weighting of responses and to permit an evaluation of the assessing ability of each individual. Specifically, each individual is asked to rate himself or herself on a prescribed scale (1 to 5) as to the degree of expertise on each question and to identify other individuals

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*Andrew Lipinski, "Future Crude Oil Prices," Proprietary Study for Imperial Industries, Ltd. by Institute for the Future, 1979.

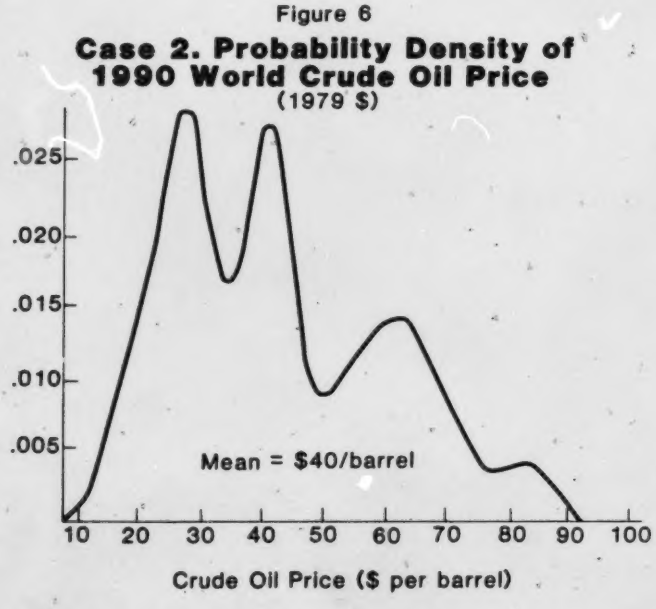
in the group whom he or she would rate at the top of the scale. (Experience shows very high correlation exists between self-rating and peer rating.) Also, a short test of assessing ability is administered to each individual. This test is designed to evaluate and enhance the capability of each individual to translate incomplete and uncertain knowledge into corresponding statements of probability.

Step 4. Forecasts from item 2 are each weighted and modified in accordance with the results of substantive ratings and assessing capabilities as determined in item 3; added together in a way that tends to overstate uncertainty (the assumption is implicitly made that each individual is drawing information from a common pool); and normalized to provide a composite probability distribution representing the best state of knowledge (or state of ignorance).

Step 5. Results are fed back to the group for comment and, if necessary, a second round of forecasts is elicited. Ordinarily, only minor modifications are required in the first-round composite that is presented.

Step 6. Forecasts of the world oil price in 1990 obtained through such a process are shown in Figure 6. The probability density function provides complete information on the probability of the price falling between any two specified values; the mean of the distribution is $40 per barrel (in 1979 dollars), even though the tail of distribution extends out to values of $80 to $90 per barrel. When this detailed information is combined with the factors identified by each individual, a very useful input to strategic-planning decisions can be made.

Figure 6



Case 3. Generating Scenarios: The Investment Landscape for the U.K. in the '80s* (Picture of the Situation as a Whole)

Investment opportunities in other countries have become the focus of increasing attention for U.S.-based companies as well as others. Recently the Institute completed a major multiclient study assessing the prospects of the U.K. as an investment opportunity in the next decade.

Summary of approach

Step 1. The first steps are--as outlined in Cases 1 and 2--to identify critical factors influencing investment prospects and to generate forecasts of each such variable. The 10 strategic "hooks" or key variables on which forecasts are generated in part by the approach outlined are (in a prespecified order):

world oil price
world trade
commodity prices
exchange rate
personal income tax
government spending
personal investment
personal savings
productivity
rise in wages

Step 2. Here it is necessary to deal with--in addition to individual forecasts of each variable--the structure of relationships among these variables. Because of the very large number of possible scenarios, some method must be used to aggregate these into a workable set. A probabilistic tree in which each major variable is represented by three equally probable values was constructed; for 10 major variables, the output of such a tree included approximately 60,000 scenarios (Figure 7). Needless to say, the process would have been impossible without the use of a computer.

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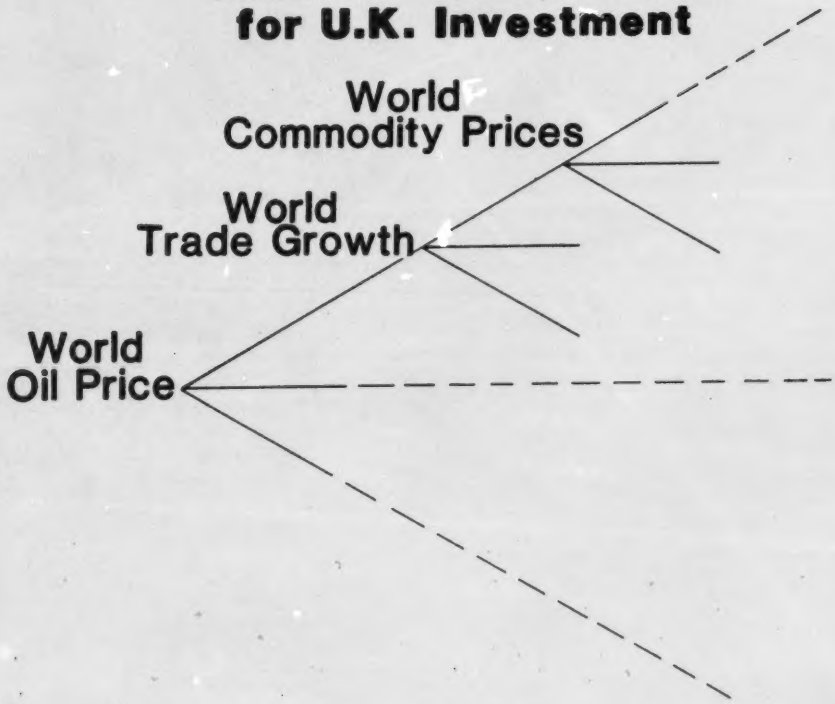
*Andrew Lipinski, "The Future of the United Kingdom," Proprietary Study for multiclient group of U.S. and U.K. companies by the Institute for the Future, 1979.

Figure 7

Case 3. Scenario Tree for U.K. Investment



Step 3. The values of each variable for each scenario are then used to drive a simple model of the U.K., specifically constructed to provide long-term forecasts of gross domestic product (GDP), inflation, and unemployment.

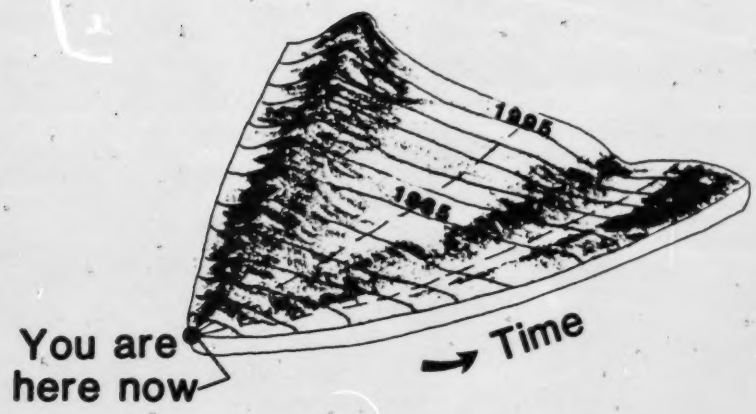
Step 4. The outputs of Step 3 are coalesced into three scenario groups and presented to a group of generalists. The purpose is to extend the scenarios and to make adjustments that would provide a greater degree of internal consistency.

Step 5. The output of Step 4 is a set of three major scenarios and a map of the U.K. investment landscape. Although the full landscape would require 13 dimensions (one for each variable) to be represented accurately, we can get a flavor of the information provided by approximating its representation in three dimensions (Figure 8). Using such a map, one can think of a territory of the future in which different futures reside side by side. It is as though someone describes a geographical region in terms of plains, deserts, and mountains where, in this instance, GDP represents the height of the landscape, employment increases from east to west, and time increases from south

to north. Now one can imagine traversing a path through this territory of hills and valleys spread east and west, north and south. Such a path would be a simple scenario with its own particular unique values of GDP and employment rates and with its own very small probability of occurrence. Or one might visualize sweeping a swath of paths, and this would be a group of scenarios with a somewhat higher set of probabilities. Generally, the territory describing the U.K. investment climate in the '80s reveals that about two-thirds of the scenarios are fairly attractive, or at worst benign, while one-third are not so attractive, or downright disastrous. The details provided by such a map can become valuable inputs to corporate models for evaluating the relative merits of specific corporate strategies.

Figure 8

Case 3. A Map of the U.K. Investment Landscape



Case 4. A Simulation Model: Market for a New High-Technology Product* (Evaluation of Alternative Strategies)

Selected macro variables of the U.S. or of another country are key variables in any corporate, long-term planning effort. Often of equal, if not greater, importance are particular micro variables that influence the market demand for a new product. Outlined below is the approach used by the Institute to construct one of the most elaborate simulation models ever built for forecasting long-term market characteristics of a new product. Included are both a representation of the external environment and connections to a corporate "model."

Summary of approach

Step 1. The environmental model was divided into two major parts: a macro part (represented by a matrix structural model of economic and competitive characteristics); and a micro part (represented by a behavioristic model reflecting user characteristics). See Figure 9.

Step 2. The principal factors in which the macro model provided forecasts were: characteristics describing the state of the economy (GNP, world oil price, etc.), the state of competitive technologies, and the characteristics of competitive products. These forecasts were fed into the micro model along with specific user, product, and marketing factors: characteristics of organizations generating demand, prices of product, product characteristics, and level of marketing effort.

Step 3. The combined macro and micro environmental model produced forecasted levels of demand described in terms of: the probability of an organization becoming a customer, initial sales to that customer, and sales growth. Simulation runs for each year were aggregated to produce expected values of the forecasted distributions.

Step 4. The demand characteristics were then fed into a "business case" corporate model to determine financial performance (return on investment) under assumptions of particular prices, production costs, and levels of marketing efforts (the same variables that were fed into the micro model in Item 2).

Step 5. A complete diagram of the model, together with the relationships to the seven stages of the PAM cycle introduced earlier, is shown in Figure 9.

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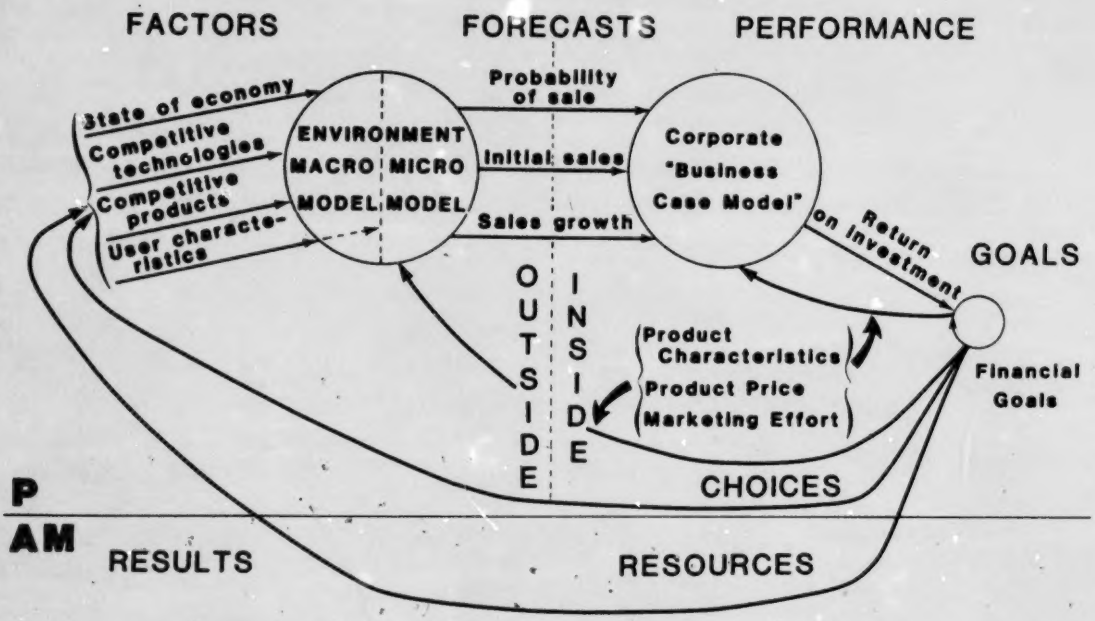
*Andrew Lipinski, "Market Identification Model," Proprietary Study for a major communications company by Institute for the Future, 1980.

Figure 9

Case 4. PAM for New Product Marketing Strategy



CONCLUDING OBSERVATIONS

These four examples illustrate the pragmatic application of the philosophy and processes of planning. Each example builds on its predecessor to illustrate the essential features of the PAM cycle, a seven-stage process that may also be characterized by a set of four essential questions. The primary purpose has thus been to present an integrated picture of the philosophy, processes, and practices of strategic planning in any organizational context, particularly that of the corporation.